

# JOURNAL

OF

## The New York Botanical Garden

EDITOR

FRANCIS WHITTIER PENNELL

*Associate Curator*

## CONTENTS

	PAGE
Further Development of The New York Botanical Garden .....	29
The Paulownia Tree at the Mansion.....	31
Birds in the New York Botanical Garden—II.....	35
Notes from the Herbaceous Collections—I.....	39
Publications of the Staff, Scholars and Students of the New York Botanical Garden during the year 1916.....	42
Notes, News and Comment .....	49
Accessions .....	52

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The Paulownia Tree at the Mansion.



# JOURNAL

OF

## The New York Botanical Garden

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### FURTHER DEVELOPMENT OF THE NEW YORK BOTANICAL GARDEN.

#### A

#### TO THE BOARD OF MANAGERS OF THE NEW YORK BOTANICAL GARDEN,

*Gentlemen:* The Executive Committee has considered the communication relative to the further development of the Garden submitted by the Director-in-Chief on November 16, 1916, and would report the following presentation of the subject with the recommendation that it be published and transmitted to all members of the Garden.

A. The City of New York has granted the Garden:

1. The use of nearly 400 acres of land in Bronx Park; the value of this land is not less than.....\$11,300,000
2. Funds which have been expended for buildings, driveways, bridges, fountains, paths, water-supply, drainage, and grading..... 1,400,000

B. The Garden's own activities have supplied:

1. Construction of paths, grading, water supply and minor construction, preparation of land for planting, furniture and equipment, costing about..... 150,000
2. About 14,000 species and varieties of living plants represented in the collections and valued at not less than..... 140,000
3. The library, containing about 28,000 volumes, valued at..... 112,000
4. Large collections in the public museums, valued at..... 50,000
5. The herbarium, consisting of about 1,500,000 specimens, valued at. 150,000
6. Endowment and permanent funds aggregating..... 550,000

This represents property of a total value of about.....\$14,000,000

The contributions of the Garden to knowledge are noteworthy, and its publications are widely distributed. Many of its former students are occupying professorial and curatorial

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positions in institutions of learning. Through the teaching of children and the diffusion of information among adults, its direct educational work is continually expanding. Its collections are of very great scientific and educational value, are among the most important of any in the world, and have attained international significance. Its grounds are among the most beautiful and attractive of those of any public park.

To utilize properly this valuable property and to utilize as well our present efficient staff, more resources are urgently needed.

The completion of construction work during the next few years is much to be desired. This construction requires expenditure approximately as follows:

1. Completion of greenhouses . . . . . \$150,000

Public Conservatory Range No. 2 is about one third built. The collections in both public ranges are crowded and greatly need more space. It is planned to make the central feature of Range No. 2 a display greenhouse for horticultural purposes. Space for the collections of economic plants is greatly desired.

For experimental, cultural and student work, the propagating houses require additions.

2. Completion of the Museum Building . . . . . 250,000

The collections in the Museum Building are congested; they are continually increasing and becoming more complete and valuable; for their proper installation one of the two wings contemplated in the plans is required as soon as possible. More laboratory space is much needed for students, and more rooms for the preparation and storage of specimens. An additional lecture-room is needed and the library has outgrown its accommodations.

3. Development of grounds and plantations . . . . . 100,000

Only a beginning has been made in the development of the tract of about 140 acres added by the City in 1915 to the Garden reservation. Paths, drainage, water supply, grading and fencing are there required; also the preparation of ground for new plantations. Portions of the original area of 250 acres are also, as yet, undeveloped, needing grading, paths and planting.

Total . . . . . \$500,000

Our present resources are insufficient to accomplish this work.

We might continue to spend about \$10,000 annually from our income as we have been doing for several years in developing the

grounds, but this is slow progress at the best and would not provide the needed buildings.

A gift of \$500,000, or gifts aggregating \$500,000, for expenditure would accomplish this work.

A gift of \$500,000, or gifts aggregating \$500,000, added to our present endowment, the interest only to be expended and the income made available for scientific and educational purposes subsequent to the completion of construction, together with such sums as might be added from other sources of income, would probably accomplish the work within about ten years. Such a foundation would be in many respects unique and its possibilities for usefulness would be enormous.

W. GILMAN THOMPSON, *Chairman*,  
R. W. DE FOREST,  
GEORGE MCANENY,  
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GEORGE W. PERKINS,  
FRANCIS LYNDE STETSON,  
FREDERIC R. NEWBOLD,  
N. L. BRITTON, *Secretary*.

## B

The foregoing report was accepted and approved by the Board of Managers at a meeting held January 8, 1917, and was referred to the Endowment Committee with power.

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## THE PAULOWNIA TREE AT THE MANSION

(WITH PLATE 191)

The frontispiece to this issue shows a single large Paulownia tree which stands very near the Mansion in the New York Botanical Garden. This is one of several different kinds of ornamental trees used in the original scheme of decorative planting for the Mansion grounds.

This tree is about 62 years old, having been planted about 1857. When the photograph was taken last September, it

measured 14 feet in circumference, or over  $4\frac{1}{2}$  feet in diameter, one yard from the ground; and it will be noticed that the trunk increases considerably at the base. It has long since passed its prime, but still flowers and fruits abundantly nearly every year. The position is a sheltered one and the soil good. An immense Norway spruce, which stood 30 feet to the south and was doubtless planted at the same time, had to be cut a few years ago because it was badly decayed. It showed 65 annual rings and was over 10 feet in circumference.

The Paulownia also, I regret to say, is visibly decayed at the base and that this decay extends throughout most of the trunk was shown the past summer by the appearance at a knothole far up in the center of the tree of a clustered fruit-body of the sulfur-colored polypore, which is a deadly enemy of trees, causing a heart-rot for which there is no remedy. It may be only a short time before this disease will cause the destruction of the tree.

The old tree would be missed by many of our visitors and its removal would be a positive calamity to the birds that build regularly in its branches and to the squirrels that use the cavities in the larger divisions of its trunk as winter residences. Last August, I discovered that it had attracted new tenants. A swarm of bees had located in one of the hollow branches 20 feet or more from the ground and were busy storing up food for the winter. Could this swarm have come from the large tulip-tree near the Long Bridge, where a nest of bees was discovered several years ago? It may be that the scouts sent out to locate the new home had visited the Paulownia when in flower and knew of its possibilities!

The botanical name of the Paulownia is *Paulownia tomentosa*, sometimes called *Paulownia imperialis*, and it is apparently the only arborescent representative of the figwort or foxglove family grown in North America. About eight species are recognized in the genus, all from China or Indo-China, but most of them are little known here and are probably less hardy than the common species. They are large or medium-sized trees with immense leaves and showy terminal panicles of purple or nearly white flowers resembling the foxglove in form. The genus was named



in honor of the ill-fated Anna Paulowna, daughter of the Emperor of Russia and hereditary princess of the Netherlands.

The *Paulownia* is called "Kiri" in Japan, where it is much cultivated, and "Too" or "Hak-too" in China, where it grows wild. In England and America it is often called Empress-tree. Dr. Siebold considered it one of the finest trees in Japan, and it has been admired there for centuries. The famous Japanese hero Taikasma designed his coat of arms from its flowers and leaves.

The occidental history of *Paulownia tomentosa* dates only from 1835, when it was grown from seed in the Jardin des Plantes in Paris. It was first cultivated in a greenhouse, but was later found to do better outside. The first tree grown fruited in its eighth year and later attained a diameter of over three feet, measured a yard from the ground.

In 1843, Paxton figured the tree in his *Magazine* and made the following statement regarding it: "A considerable quantity of this noble tree has lately been introduced to Britain from France and elsewhere; and the circulated accounts, with the likelihood of its proving hardy, have excited so much attention, that we are induced to publish a drawing of it, which was made for us last year in the Garden of Plants at Paris, even though the species has not yet flowered in our own country. . . . It is one of the finest of Dr. Siebold's many introductions from Japan, where it grows to the height of thirty to forty feet, with a trunk from two to three feet in diameter."

In *Curtis' Botanical Magazine* for 1852, a plate appears with the following comment: "We have at length the satisfaction of giving a figure of this noble plant, the first published from flowers produced in the open air in England." These flowers came from southern England; in London, the flower buds are often killed.

The *Paulownia* was probably introduced into America between 1842 and 1845 in the form of seeds, which were grown in some of the prominent nurseries. This nursery stock was doubtless distributed far and wide and gave rise to the first trees to produce and scatter seed in various parts of the country. It would be interesting to locate any of these original trees, and especially any that may still exist in the vicinity of New York City.

In the *Garden Journal* for 1907, Mr. Nash described and figured a young tree planted near the Museum building which grew fourteen feet in one season. Dr. Siebold said that his young trees grew six to ten feet in a year and increased their diameter four or five inches in three years. This rapid growth makes soft, light, coarse-grained wood of little strength but durable when not exposed to the weather and valued in Japan for cabinet work and for the charcoal used in the best fireworks.

A curious discovery was made in Paris in working with the first seedlings. During the first year, they made no wood and consequently died down to the ground, sending up one or two hardy sprouts the following spring with leaves nearer their adult form and structure. The tree has been spoken of as a "large herb," resembling as it does in some respects when young many of the large tropical herbaceous plants.

In America, the *Paulownia* has escaped from cultivation and grows wild from southern New York southward along the Atlantic and Gulf coasts to Florida and Texas. It is also a common tree in Indiana, California, and certain other states. North of New York City, the flower buds are usually killed during the winter, although the tree itself may be hardy as far north as Massachusetts. In Montreal, it is killed to the ground every year and new shoots spring up which are highly ornamental as foliage plants. Similar growths are sometimes secured farther south by cutting back the trunk regularly.

As in the case of the *Ailanthus*, the rapid spread of the *Paulownia* is due to its adaptation to almost any soil, its quick growth, easy propagation, and comparative freedom from diseases and pests. Great numbers of winged seeds sift through the slits in the ripe capsules and scatter in every direction. Shoots arise from the roots or from any part of the stem that may be covered with soil. Cuttings may be made not only from the root and green wood, but also from the young, unfolding leaves, thus emphasizing the peculiar herbaceous character of the tree.

As a shade tree, it may be used for parks, lawns, and avenues, but is hardly desirable for ordinary street planting. Light, deep loam is the best soil for it, although it grows fairly well in poorer

soils. The flowers are large, delicately scented, and attractively colored, but they appear before the leaves and thus lack a suitable setting. The conspicuous ovoid pods remain on the tree during the winter and give it an unattractive appearance. The terminal branches, also, exhausted by fruit bearing, usually die back three or four feet and have to be removed.

Two varieties of *Paulownia tomentosa* are recognized. Variety *pallida* has pale blue-violet flowers and leaves that are obscurely green above. Variety *lanata* has flowers of the typical color, but its branches, leaves, and flowers are conspicuously woolly-pubescent, which makes it somewhat hardier. It is also larger and better for cultivation than the ordinary typical form.

W. A. MURRILL,  
Assistant Director

## BIRDS IN THE NEW YORK BOTANICAL GARDEN

### II. BIRD FOODS

To give a complete list of all the various kinds of food to be found in the Botanical Garden suitable for birds would be impossible in the space at our disposal. For convenience it has been thought best, following two recent and authoritative lists compiled by experts, to indicate which foods mentioned by them may be found in the Garden.

The following list of fruit-bearing trees, shrubs, vines and herbaceous plants attractive to birds, showing the season when the fruit matures and when it is available for food, is adapted from that compiled by Mr. Wilson H. Fay for Edward Howe Forbush's "Useful Birds and Their Protection." We cite only plants known to grow in the Garden.

June.....	Shad-bush, Juneberry, <i>Amelanchier canadensis</i> (tree).
June, July.....	Red-berried elder, <i>Sambucus racemosa</i> (shrub).
June, July.....	Wild red raspberry, <i>Rubus aculeatissimus</i> (shrub).
June, July, August.....	Blueberries, <i>Vaccinium</i> (shrubs).
June, July, August.....	Black and white mulberries, <i>Morus</i> (trees).
July.....	Wild strawberry, <i>Fragaria virginiana</i> (herb).
July.....	Thimbleberry, <i>Rubus occidentalis</i> (shrub).
July.....	Wild red cherry, <i>Prunus pennsylvanica</i> (tree).

- July. . . . . Wild black currant, *Ribes floridum* (shrub).  
 July, August. . . . . Wild sarsaparilla, *Aralia nudicaulis* (herb).  
 July, August. . . . . False spikenard, *Vagnera racemosa* (herb).  
 July, August. . . . . Sassafras, *Sassafras variifolium* (tree).  
 July, August. . . . . High-bush blackberry, *Rubus allegheniensis* (shrub).  
 August. . . . . Black cherry, *Prunus serotina* (tree).  
 August. . . . . Choke cherry, *Prunus virginiana* (tree).  
 August, September. . . . . Gray cornel, *Cornus femina* (shrub).  
 August, September. . . . . Silky cornel, *Cornus Amomum* (shrub).  
 August, September. . . . . Red-osier dogwood, *Cornus stolonifera* (shrub).  
 August, September. . . . . Alternate-leaved cornel, *Cornus alternifolia* (shrub).  
 August, September. . . . . Beach plum, *Prunus maritima* (shrub).  
 August, September. . . . . Common elder, *Sambucus canadensis* (tree).  
 August, September. . . . . Dewberry, *Rubus villosus* (vine).  
 August, September. . . . . High blueberry, *Vaccinium corymbosum* (shrub).  
 September. . . . . Climbing bitter-sweet, *Celastrus scandens* (vine).  
 September. . . . . Moonseed, *Menispermum canadense* (vine).  
 September. . . . . Cranberry-tree, *Viburnum Opulus* (shrub).  
 September. . . . . Arrow-wood, *Viburnum acerifolium* (shrub).  
 September. . . . . Black haw, *Viburnum prunifolium* (shrub).  
 September. . . . . Withe-rod, *Viburnum cassinoides* (shrub).  
 September. . . . . Sweet gum, *Liquidamber Styraciflua* (tree).  
 September, October. . . . . White thorn, *Crataegus coccinea* (tree).  
 September, October. . . . . Tupelo, sour gum, *Nyssa sylvatica* (tree).  
 September–October. . . . . Northern fox grape, *Vitis labrusca* (vine).  
 September–November. . . . . Sheepberry, *Viburnum Lentago* (shrub).  
 September–winter. . . . . Flowering dogwood, *Cornus florida* (tree).  
 September–winter. . . . . Hackberry, nettle-tree, *Celtis occidentalis* (tree).  
 September–winter. . . . . Spice bush, *Benzoin aestivale* (shrub).  
 September–winter. . . . . Snowberry, *Symphoricarpos racemosus* (shrub).  
 September–winter. . . . . Inkberry, *Ilex glabra* (shrub).  
 September–winter. . . . . Black alder, *Ilex verticillata* (shrub).  
 September–winter. . . . . American holly, *Ilex opaca* (tree).  
 September, winter. . . . . American mountain ash, *Sorbus americana* (tree).  
 September–winter. . . . . European mountain ash, *Sorbus Aucuparia* (tree).  
 September–winter. . . . . Red cedar or savin, *Juniperus virginiana* (tree).  
 September–winter. . . . . Common juniper, *Juniperus communis* (shrub).  
 September–winter. . . . . Poison ivy, *Rhus Toxicodendron* (shrubby vine).  
 September–winter. . . . . Checkerberry, *Gaultheria procumbens* (herb).  
 September–winter. . . . . Partridge berry, *Mitchella repens* (vine).  
 September–winter. . . . . Pokeweed, *Phytolacca decandra* (herb).  
 September–winter. . . . . Barberry, *Berberis vulgaris* (shrub).  
 September–winter. . . . . Common greenbrier, *Smilax rotundifolia* (vine).  
 September–winter. . . . . Bayberry, *Myrica carolinensis* (shrub).  
 September–winter. . . . . Privet or prim, *Ligustrum vulgare* (shrub).  
 September–winter. . . . . Virginia creeper, *Psedera quinquefolia* (vine).  
 September–winter. . . . . Common night-shade, *Solanum nigrum* (vine).  
 September–winter. . . . . American hornbeam, *Carpinus caroliniana* (tree).



- September–winter . . . . . Cockspur thorn, *Crataegus Crus-galli* (tree).  
 September–winter . . . . . Wild rose, *Rosa humilis* (shrub).  
 September–winter . . . . . Staghorn sumach, *Rhus hirta* (shrub).  
 September–winter . . . . . Dwarf sumach, *Rhus copallina* (shrub).  
 September–winter . . . . . Smooth sumach, *Rhus glabra* (shrub).  
 November . . . . . Frost grape, chicken grape, *Vitis cordifolia* (vine).

Not included in the above list, but also in the Garden, are the following from a list compiled by Mr. William L. G. Edson for *Bird Lore*, December, 1915:

- June, July . . . . . Ruprecht's Honeysuckle, *Lonicera Ruprechtiana*.  
 July . . . . . Morrow's honeysuckle, *Lonicera Morrowi*.  
 July . . . . . Bush honeysuckle, *Lonicera bella*.  
 July . . . . . Tartarian honeysuckle, *Lonicera tatarica*.  
 September . . . . . English Fly-honeysuckle, *Lonicera xylcsteum*.  
 July . . . . . Mahaleb cherry, *Prunus Mahaleb*.  
 July, August . . . . . White-fruited dogwood, *Cornus alba*.  
 July . . . . . Mountain currant, *Ribes alpinum*.  
 July . . . . . Buffalo currant, *Ribes aureum*.  
 October . . . . . Dogwood, *Cornus controversa*.  
 August . . . . . Purpus's dogwood, *Cornus Purpusii*.  
 July . . . . . Japanese oleaster, *Elaeagnus multiflorus*.  
 July, August . . . . . Smoke tree, *Rhus Cotinus*.  
 July . . . . . Japanese viburnum, *Viburnum tomentosum*.  
 August . . . . . Wayfaring tree, *Viburnum lantana*.  
 August . . . . . Arrow-wood, *Viburnum dentatum*.  
 August . . . . . Pubescent viburnum, *Viburnum pubescens*.  
 September . . . . . Canby's viburnum, *Viburnum Canbyi*.  
 July . . . . . European bird cherry, *Prunus Padus*.  
 September . . . . . Thorns, *Crataegus*.  
 September, winter . . . . . Buckthorn, *Rhamnus cathartica*, *lanceolata*, *Purshiana*.  
 September . . . . . Sea buckthorn, *Hippophae rhamnoides*.  
 September, October . . . . . Silver thorn or oleaster, *Elaeagnus angustifolius*.  
 September to March . . . . . Crab-apple, *Malus floribunda*.  
 October . . . . . Crab-apple, *Malus Ringo*.  
 September . . . . . Barberry, *Berberis Poirrettii*.  
 September . . . . . Common barberry, *Berberis vulgaris*.  
 March, April . . . . . Thunberg's barberry, *Berberis Thunbergii*.  
 October . . . . . Spindle-tree, *Euonymus Sieboldianus*.  
 November . . . . . Matrimony vine, *Lycium halimifolium*.  
 Fall, winter . . . . . Weigelia, *Diervilla hybrida* variety.  
 Spring . . . . . Dandelion, *Leontodon Taraxacum*.  
 December . . . . . Sweet birch, *Betula lenta*.  
 August to March . . . . . European white birch, *Betula alba*.  
 August, September . . . . . Black birch, *Betula nigra*.  
 September to June . . . . . European and Japanese larches, *Larix europaea*, *leptolepis*.

Fall, winter. . . . . St. John's wort, *Hypericum prolificum*.  
 July. . . . . Goumie, *Elaeagnus longipes*.

"Nearly all the winter birds, from the kinglet to the crow, eat the barberry," says Mr. Forbush, who is State Ornithologist of Massachusetts. "The supply at Wareham usually becomes exhausted in February, after which the Myrtle warbler and many of the winter sparrows disappear." On the contrary, the barberry, which is prolific and of which several varieties are to be found in the Garden, does not seem to be a favorite with birds, although a few of them occasionally partake.

Robins feed on elder-berries, honeysuckles, dogwoods, mountain currant, oleaster, mountain ash, viburnums, sheep-berry, blueberries, hawthorn, buckthorn, crabapples, matrimony vine and barberries.

Bluebirds prefer wild cherries, sumachs, poke-berry and elder-berries.

Cuckoos like mulberries and elders.

Orioles choose mountain ash, wild cherries and service-berries.

Pine grosbeaks select poplars, pines, cedar, spruces, tamarack, maples and mountain ash.

Grackles favor elders and mountain ash.

Blueberries suit the chewink.

Cardinals partake of red cedar, catbrier, bittersweet, sumachs and haws.

Rose-breasted grosbeaks like buds and blossoms of all fruit trees and seed of alders and birches.

Thrushes eat small fruits and Virginia creeper.

Purple finch fares equally well on seeds of white ash or berries of red cedar and mountain ash.

Cedar waxwing visits dogwoods, oleaster, mountain ash, sheep-berry, blueberry, wild cherry, crabapple and of course cedar.

Of the vireos the yellow-throated prefers fruit of red cedar, and the red-eyed prefers prickly ash, dogwoods, sassafras, magnolias, hornbeam, spice-bush, mulberries, pokeberries and viburnums.

Even the woodpeckers spare time for a taste occasionally—the hairy of sumachs, Virginia creeper, and dogwoods; the downy of

sumachs and poison ivy; the red-head of mountain ash, acorns and beechnuts; the flickers of honeysuckles, dogwoods, bayberries, sumachs, and wild cherries.

The kingbirds find food on the dogwoods, and the phoebes on the hawthorns.

Look for crossbills where you find arbor-vitae, tamarack or firs; redpolls on birches, alders, buttonbush or larches; siskins on sweet gum, maples or elms; gold-finches on smoke-tree, birches or larches.

Thrashers visit viburnums, mountain ash, honeysuckles, dogwoods, currants and cherries.

Tennessee, black-throated, green and myrtle warblers are fond of poison sumach and ivy.

St. John's-wort is a favorite with junco and tree sparrow.

Catbirds eat dogwoods, oleaster, viburnums, Virginia creeper, sassafras, spice-bush, honeysuckles, cornels and blueberries.

F. A. H.

## NOTES FROM THE HERBACEOUS COLLECTIONS—I

Plants of a possible horticultural value or of especial botanical interest are grown in the Herbaceous Grounds. It is planned to present from time to time notes concerning these. In this number are considered four plants of the Poppy family, all of which have flowered during the past summer.

*Hypercium procumbens* L. is a delicate annual which flowered for a short time in mid-summer. While it promises little of horticultural value, it proves of interest from a botanical standpoint. Several stems less than 1 foot high rise from amongst leaves slightly glaucous, resembling those of the fumitories. Lightly carried on the stems are bright yellow flowers each less than 1 inch in diameter. The two sepals drop when the flower expands, and the four petals also fall after a short time. Of the latter the two outer ones are ovate and bluntly three-lobed, the two inner are much smaller, and nearly trifid. This is, perhaps, the most striking irregularity of corolla in the Papaveraceae. The long slender capsule is transversely ridged, and at first glance suggests that of some member of the Mustard family.

This plant, which is a native of parts of Europe, Asia, and northern Africa, is said to sow itself freely in England, being treated as a hardy annual. In conditions such as those given it at the Garden, it needs to be grown each year from planted seed, preferably in its permanent location.

Another interesting plant is the yellow or Celandine poppy, *Stylophorum diphyllum* (Michx.) Nutt., an herb of use to the horticulturist. It is the American representative of a small genus, of which another species is in our herbarium from China. It is a robust perennial, with leafy stalks, 1 foot high, arising from a large rootstock. The leaves are ovate-oblong, varying from bluntly lobed to nearly crenate-margined. They are slightly glaucous above and almost scurfy beneath. Two small stem-leaves are usually borne together at the top of the stem, hence the specific name. Above these two leaves are the blossoms in a few-flowered terminal raceme. The hairy sepals drop away when they are no longer needed to enclose the folded flower, and disclose a corolla 2 inches in diameter, made up of four rounded yellow petals. The center of the flower is made prominent by the large green style and stigma with the yellow anthers as body-guard. The capsule is four-valved, oval, and tipped with the persistent style.

In the presence of a copious orange-yellow sap, and in the appearance of its leaves, the Celandine poppy resembles that old favorite, the Celandine, but has flowers much larger and capsules distinct in size and shape.

*Stylophorum diphyllum* is native to the east-central United States, where it grows in low, moist woods. Our plant flourishes in the open, doing much better for us there than does its relative the blood-root. It is very floriferous, blooming in the spring and early summer, and is quite hardy. A somewhat shaded location may improve it. Easily grown from seed, it may also be propagated by dividing the roots. However, this should be attempted with the care needed in the treatment of plants of the poppy and fumitory families.

During the summer of 1915, in the nursery of the Garden, a group of scurfy gray leaves appeared to be the only manifestation



of a plant designated as a *Glaucium*. The following year, however, a strong branching stem grew to a height of nearly 3 feet, bearing rounder, smoother and clasping leaves, which were quite different from the radical ones below. This stem bore several large yellow flowers of short duration, but which were quickly followed by others. The capsules were long, slender, and slightly curled, with a dryness and brittleness which gave them an appearance of being carved out of some light wood.

This plant, the yellow-horned or sea poppy (*Glaucium Glaucium* (L.) Karst.), is a native of Europe, but is now found adventive in parts of the eastern United States. On account of its silvery-gray root-leaves, it may be used as a foliage plant; however, its coarse habit makes it of little value for the flower garden. It appears to be biennial here, and is easily propagated by seeds sown directly in the permanent location.

After a complete failure one season, the cream-cups, *Platystemon californicus* Benth., has been grown in the Herbaceous Grounds this summer. This species is a dainty annual from the Pacific slope of this country. In habit it is low and branching, and is clothed with an abundance of long spreading hairs. The leaves are linear-lanceolate and entire. The flowers are borne on slender pedicels 4 to 5 inches long. The sepals are three in number, one more than most of the plants of the order possess. The six cream-colored petals remain expanded longer than do those of the other genera of the family, but our specimen did not show the corolla persistent over the capsule, an interesting habit claimed for *Platystemon*. This name, which is Greek for "broad stamen," is derived from the dilatation of the filaments of the cluster of stamens which surround the style. The capsule is divided to the base into moniliform carpels, a very singular character which has suggested to botanists a kinship to the Crow-foot Family.

This plant is native to California, Utah, and Arizona, living in sandy soil. It is occasionally grown as a border annual, and is to be propagated by seeds sown in the open ground.

The *Eschscholtzias*, *Hunnemannias* and *Argemones*, more familiar members of the poppy family, by reason of the beauty

and oddity of their leaves and the varied yellow shades of their flowers, furnish us with plants so attractive that these others of their clan may seem scarcely needed in our gardens. However, these others show no lack of interesting characters, and it is to be hoped that they may be kept in our collections.

KENNETH R. BOYNTON

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STUDENTS OF THE NEW YORK BOTANICAL  
GARDEN DURING THE YEAR 1916

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R. S. WILLIAMS

## NOTES, NEWS AND COMMENT

Professor F. D. Kern, of the Pennsylvania State College, recently spent several days at the Garden working over manuscript on rusts preparatory to the work in *North American Flora*.

Dr. O. Kunkel, of the United States Department of Agriculture, recently spent a day at the Garden conferring with Dr. Arthur in connection with rust work.

Dr. W. C. Sturgis, formerly Dean of the College of Forestry in Colorado College, was a recent visitor at the Garden. Dr. Sturgis expects to spend several weeks in Bermuda where he will collect fungi and slime moulds.

Dr. Henri Hus, who is on leave of absence for three years from the University of Michigan, is spending several months at the Garden prosecuting investigations of various rubber-producing plants. He has recently returned from Java, with considerable material for his studies.

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The following persons enrolled in the library during January as visitors to the Garden: Dr. C. H. Kauffman, Ann Arbor, Mich.; Dr. Caroline A. Black, Durham, N. H.; Dr. A. G. Johnson, Madison, Wis.; Dr. H. B. Humphrey, Washington, D. C.; Dr. J. C. Arthur and Prof. H. S. Jackson, Lafayette, Ind.; Dr. D. T. MacDougal, Tucson, Ariz.; Dr. E. E. Free, Baltimore, Md.; Dr. Alfred Gunderson, Brooklyn, N. Y.; Dr. H. Hus, Ann Arbor, Mich.; Dr. Philip Dowell, Port Richmond, N. Y.; Prof. Frank D. Kern, State College, Pa.; Miss Caroline C. Haynes, Highlands, N. J.; Dr. Ezra Brainerd, Middlebury, Vt.; Dr. Wm. C. Sturgis, Colorado Springs, Colo. and Prof. Alexander W. Evans, New Haven, Conn.

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Dr. C. L. Shear visited the Garden on February 3 to consult the library and mycological collection. He then went with Professor J. C. Arthur to Philadelphia to examine the Schweinitz collection of fungi to determine how it may be made more available to American mycologists. Dr. Shear and Dr. Arthur are members of a committee appointed for this purpose by the American Pathological Society.

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Dr. W. A. Murrill, assistant director, visited the state museum at Albany, January 12-16, to study certain types of fleshy fungi described by Dr. C. H. Peck. The herbarium is now safely housed in new steel cases in the Education Building, and most of the types appear to be in excellent condition. Dr. H. D. House, state botanist, has spent considerable time getting the specimens of fungi together so that they might be available for study.

Dr. Marshall A. Howe, curator, gave an illustrated lecture on "Planning Next Summer's Flower Garden" before the Garden Club of Pleasantville, New York, on the evening of February 6.

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The second lecture and conference of the course for Garden members being given at the Mansion was delivered on Thursday, February 8. The subject was "Winter Fruits" and was presented by Mr. George V. Nash, head gardener. A collection of specimens from the Garden collections of about thirty kinds of shrubs and trees, still retaining their fruits, was exhibited. About two dozen colored drawings of shrubs and trees in fruit were also displayed; these drawings were prepared for future illustrations in "Addisonia."

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Nearly 700 biology pupils from Evander Childs High School spent the forenoon of January 23 at the Garden studying the conservatory and museum collections under the guidance of their teachers and members of the Garden staff, following a schedule and series of exercises prepared by Mr. Paul B. Mann. The subject of forestry was presented by an illustrated lecture given in the lecture hall by Mr. George E. Hewitt. In connection with this subject, various trees on the grounds were examined with special reference to their appearance and protection during the winter months.

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About 600 biology pupils from Morris High School assembled in the lecture hall of the museum building shortly after eight o'clock on the morning of January 25 to hear a lecture on forestry by Mr. Sherwood, of the American Museum of Natural History. After the lecture, the pupils in groups of fifty were conducted through the museum to observe plant products; through the grounds to examine trees in winter condition; and through the conservatories to see tropical economic plants. A list of carefully prepared questions was submitted to each pupil to be answered in writing while making the observations.

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An attractive place in conservatory range I during this month is the aquatic house, no. 9. Here are two tender water-lilies,

Mrs. Woodrow Wilson, of a rather pale blue, and Panama-Pacific, of a deep rosy red when first opening, later becoming a rich reddish purple, one of the recent and most attractive of the tender water lilies. Another interesting plant in this house, a native of the swamps of the eastern United States, is the golden club, *Orontium aquaticum*; the golden spikes, on erect ivory-white stalks, are in striking contrast with the rich dark green of the foliage. Many other interesting plants will be found here, both in the water and planted along the margin of the pool.

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*Meteorology for January.*—The total precipitation for the month was 3.30 inches, of which 0.9 inches (9 inches snow measurement) fell as snow.

The maximum temperatures for each week were  $51^{\circ}$  on the 7th,  $48^{\circ}$  on the 10th,  $41^{\circ}$  on the 18th, and  $49^{\circ}$  on the 28th. The minimum temperatures were  $21^{\circ}$  on the 7th,  $7^{\circ}$  on the 12th,  $17^{\circ}$  on the 20th, and  $13^{\circ}$  on the 27th.

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## ACCESSIONS

### PLANTS AND SEEDS.

- 3 plants, all cacti, for conservatories. (Collected by Dr. J. K. Small.)
- 1 plant of *Mamillaria radiosa*. (By exchange with U. S. Dept. of Agriculture, through Mr. H. W. Long.)
- 4,000 bulbs of Darwin tulip Margaret. (Given by John Scheepers & Co., Inc.)
- 5,000 bulbs for decorative purposes. (Purchased.)
- 1 pkt. of seed of *Ardisia polycephala*. (Collected by Dr. J. K. Small.)
- 1 pkt. of seeds of *Ipomoea triloba*. (Collected by Dr. J. K. Small.)
- 4 pkts. of seeds of Australian shrubs. (Given by Mr. Henry Natho.)



## Members of the Corporation

Fritz Achelis,	J. Montgomery Hare,	George W. Perkins,
Edward D. Adams,	Edward S. Harkness,	Henry Phipps,
Charles B. Alexander,	Prof. R. A. Harper,	James R. Pitcher,
Vincent Astor,	T. A. Havemeyer,	Ira A. Place,
John W. Auchincloss,	A. Heckscher,	M. F. Plant,
George F. Baker,	Bernhard Hoffmann,	Charles F. Rand,
Stephen Baker,	Henry R. Hoyt,	Ogden Mills Reid,
Edmund L. Baylies,	Archer M. Huntington,	Edwin A. Richard,
Eugene P. Bicknell,	Adrian Iselin, Jr.,	Prof. H. M. Richards,
C. K. G. Billings,	Dr. Walter B. James,	John D. Rockefeller,
George Blumenthal,	Pierre Jay,	William Rockefeller,
Prof. N. L. Britton,	Walter B. Jennings,	W. Emlen Roosevelt,
Prof. Edw. S. Burgess,	Otto H. Kahn,	Prof. H. H. Rusby,
Dr. Nicholas M. Butler,	Prof. James F. Kemp,	Dr. Reginald H. Sayre,
Andrew Carnegie,	Darwin P. Kingsley,	Jacob H. Schiff,
W. H. Carpenter,	Edw. V. Z. Lane,	Mortimer L. Schiff,
Prof. C. F. Chandler,	Dr. Albert R. Ledoux,	James A. Scrymser,
William G. Choate,	Prof. Frederic S. Lee,	Isaac N. Seligman,
Hon. W. A. Clark,	Adolph Lewisohn,	Albert R. Shattuck,
C. A. Coffin,	David Lydig,	Henry A. Siebrecht,
Samuel P. Colt,	Kenneth K. Mackenzie,	William Sloane,
Edmund C. Converse,	V. Everit Macy,	Valentine P. Snyder,
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